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Investigation of physical activity level and life quality of elementary school teachers under the Ministry of National Education

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Abstract

The aim of this study was to investigate the physical activity level and life quality of teachers who work in provincial elementary schools of the national education ministry, Antalya. Totally 160 teachers (78 female, 82 male) participated in this study. The average age of the teachers was 41,99±6,35 years for female, and 44,45±6,71 years for male. The waist and hip circumference, body height, and weight of subject were measured. Physical Activity Levels (PAL) of subjects was evaluated by using International Physical activity Questionnaires (IPAQ). SF-36 Quality Life Questionnaires was used for determining subjects' life quality. It was found that the average energy consumption of teachers was 1608,50±2026,11 MET-min.week^{-1}. On the other hand, male teachers were higher ($p<0.01$) and heavier ($p<0,05$) than their female colleagues in body height and weight, respectively. Thus, BMI's scores of male teachers were higher than their female colleagues ($p<0,05$). On the one hand, women had more MET scores than men in many activities; on the other hand men had more scores in physical role in this study.

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Keywords: Physical activity, IPAQ, MET, BMI;

1. Introduction

Ever-increasing prosperity in parallel with technological developments makes human beings move less in developed and developing societies. While improvement of vehicles, elevators, electrical household appliances bring great convenience, they have restricted the limits of human beings' activities. Sedentary lifestyle together with malnutrition have increased the risk of fatty degeneration and falling ill in many ways (Özer, 2001). The benefits of regular physical exercise have been reported in many literature studies (Schmitz et al, 2005, Booth et al, 2001, Mechelen et al, 2000, Cooper et al,2005). Physical activity; 1) increases the level of physical fitness, 2) decreases the risk factors for serious chronic diseases, and 3) even the physical activity at a low level has an inverse relationship with the factors causing death rates.

As pointed out by Hipocrates, fatness is not only a disease but also the initiator of other illnesses (Halsam & James, 2005). Overweight and obesity are the leading ones of the illnesses which are caused by physical inactiveness all among the world (Wang, 2002, Canning, 2004).

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Physically active life style does not only protect the individuals from unhealthy behaviours such as smoking, the use of alcohol and drugs but also it helps them develop healthy behaviours such as balanced nutrition and a safe life style.

The findings of the research suggest that physical activity forms the basis of a healthy life and it should be carried on for the life, and that regular physical activity habits should be imposed during childhood. (Pate et al, 1996, Malina & Bouchard, 2004, Graham et al, 2001)

2. Material and method

160 teachers working at primary schools under Antalya Provincial Directorate for National Education formed our pool. 82 of the teachers who were involved in the research were male (approximate age 44,45±6,71 years) whereas 78 of them were female (approximate age 41,99±6,35years).

2.1. Measurements

Height and weight measurements of the study group were taken, and accordingly, BMI (height/weight^2) values were calculated.

Physical activity levels were determined by International Physical Activity Questionnaire (IPAQ) (Craig et al, 2003). Validity and reliability of the questionnaire were performed for Turkey (Öztürk, 2005). In the present study, the long form of the questionnaire covering "the last seven days" was used for the assessment of physical activity levels. This long form is composed of 27 questions and 5 parts (related to job, transportation, house, recreation, sport and spare time activities, sedentary time). MET (metabolic equivalent) of these 5 parts in the long form were determined by MET levels of moderate-vigorous activities and total scores obtained from questionnaires.

Minute, day and MET (recreation oxygen consumption layers) of each part are multiplied according to questionnaire results, and consequently, a score (MET-minute/week) is obtained

In terms of MET values at moderate and vigorous levels, activities between 3 and 8 were accepted moderate, while those ≥8 were accepted vigorous activities, and calculations were made accordingly. Times of these activities were calculated by the number of days per week * duration of daily activities (minute).

For measuring and the evaluation of life quality, the commonly-used SF36 questionnaire form was employed, which consisted of 11 questions and 35 items; developed by Medical Outcome trust; tested in their own language in terms of validity, reliability and norms in many countries. It was translated into Turkish and it was studied in terms of validity and reliability (Koçyiğit et al, 1999, Gülseren et al 2001). Physical function, social function, role limitations related to physical problems, role limitations related to social problems, mental health, energy/vitality, pain and general health scores were calculated. The last four weeks were taken into consideration for the answers to the questionnaire (Gülseren et al 2001).

2.1.1. Statistics

Descriptive statistics and distributions of all groups were taken into consideration. The groups were classified in terms of sexuality, and according to the identificatory statistics and homogeneity, the differences between the groups were evaluated by using independent Sample T test or Mann-Whitney U test.

The correlation between life quality score and physical activity marks was analysed via Spearman Correlation test due to the abnormal range extensity caused by the characteristics of physical activity questionnaire data. Significance level was set to 0.05 (*: $p<0.05$) and 0. 01 (**: $p<0,01$). All statistical analyses were performed by SPSS 10.01 packet software.

3. Tables

Table 1: Comparison of the Anthropometric Values of the Study Group according to Sexuality

	Female (n=78)		Male (n=82)
	A.O±Ss	p	A.O±Ss
Age (year)	41,99±6,35	0,75	44,45±6,71
Height (cm)	165,81±4,62	**	177,02±6,68
Weight (kg)	68,59±10,74	*	83,02±8,83
BMI(kg/m^2)	24,96±3,84	*	26,56±3,18
W/H (cm)	0,79±0,09	0,78	0,89±0,08

* p<0.05 ** p<0.01

When the teachers involved in the study were examined in terms of age, height, weight, body-mass index (BMI), and waist-hip ratio (W/H) rates according to sexuality, it was found out that the values of height, weight and body-mass index had a meaningful difference statistically (p<0,05, p<0,01).

Table 2**:** MET values of the questionnaire items and their comparison according to sexuality

	Female (n=78)		Male (n=82)
	A.O±Ss	p	A.O±Ss
MET 1(MET/hf)	548,29±1162,77	0,57	398,70±681,78
MET 2(MET/hf)	220,00±287,64	0,065	198,86±518,02
MET 3(MET/hf)	757,18±547,18	**	280,24±939,32
MET 4(MET/hf)	442,28±813,82	0,086	388,98±908,35
TPA ((MET/hf)	1967,74±1812,59	**	1266,77±2166,21
GHS	71,67±1937	0,10	67,01±17,17
PF	88,78±18,43	0,60	89,63±16,06
PR	84,29±31,75	**	94,82±17,45

* p<0.05 ** p<0.01

When the marks of the male and female teachers who were involved in the research were for the first, second, third and fourth parts of the UFA questionnaire and their total physical activity scores were compared according to sexuality, it was found out that there was a statistically meaningful difference for the third part (housework and gardening) as well as the total physical activity MET values (p<0,01). When General Health Score (GHS), Physical Function (PF) and Physical Role (PR) scores were compared, it was realised that there was a meaningful difference in terms of physical roles. (p<0,01).

Table 3: MET values related to activity levels and their comparison according to sexuality

	Female (n=78)		Male (n=82)
	A.O±Ss	p	A.O±Ss
Walking (MET/hf)	697,23±873,49	0,029	532,63±936,64
Medium Level (MET/hf)	1069,49±1047,36	**	449,76±1229,59
Walking+Medium Level (MET/hf)	1766,72±1550,20	**	982,38±1894,46
Vigorous level (MET/hf)	201,03±424,10	0,74	284,39±800,44

* p<0.05 ** p<0.01

When MET values of the male and female teachers who were involved in the study for walking, medium level, total medium (Walking + Medium level MET value) level and Vigorous level were compared according to sexuality, it was found out that there was a meaningful difference in terms of sexuality, for medium-level MET values, walking and the total medium-level MET values (p<0,01).

Table 4: The correlation among the values of SF 36 questionnaires, IPAQ and anthropometric data for the teachers involved in the study

	Weight	W/H	MET1	MET2	MET3	MET4	GSS	F İ	F R
Weight (kg)	1.00								
W/H (cm)	0,577**	1.00							
MET1	-0,111	-0,074	1.00						
MET2	-0,268**	-0,300	0,444**	1.00					
MET3	-0,534**	-0,526**	0,082	0,278**	1.00				
MET4	-0,330**	-0,290**	0,385**	0,536**	0,172*	1.00			
GHS	-0,4O4**	-0,168*	0,152	0,317**	0,207**	0,293**	1.00		
PF	-0,261**	-0,192*	-0,035	0,178*	0,107	0,150	0,534**	1.00	
PR	-0,071	0,083	0,048	0,087	-0,116	0,152	0,320**	0,304**	1.00

* p<0.05 ** p<0.01

4. Results and discussion

It was found out that body mass indexes (BMI) of all the primary teachers involved in the study (n=160) was 25,78±3,60 while W/H rates were 0,84±0,10. When the teachers involved in the study were examined in two different groups in terms of the sexuality factor, it was found out that female teachers were shorter and lighter than the male teachers (P<0,01). BMI values of the male teachers were 26,56±3,18 kg/m^2 whereas it was 24,96±3,84 kg/m^2 for the female teachers. BMI has been categorized in literature as normal weight (<25), fat (25-30) and obese (>30) (Seidell 2002).

When the questionnaire results for the physical activity of the study group were analysed, it was observed that weekly activity MET values were 1608,50±2026,11. It was observed that 612,87±907,32 of the activity MET values belonged to walking, 751,87±1182,37 belonged to the medium level whereas 243,75±644,40 belonged to high level activities. Comparing the groups according to sexuality, it was found out that activity values for housework and gardening were higher in females (757,18±547,18) than the males (280,24±939,32) (p<0,01). Total physical activity MET values were also higher in females (1967,74±1812,59) than the males (1266,77±2166,21).

Although there was not a statistical difference about the other parts of the questionnaire, almost all MET values for the female teachers were in tendency to be higher. It is usually emphasized in many works of literature that physical activity level tends to decrease gradually starting from childhood towards puberty and that the physical activity amounts of the males are higher during almost all periods (Özdöl, 2009). Our findings that are totally the opposite of the literature-based knowledge might suggest the idea that the activity levels such as housework and gardening are higher and this might be based on the roles attributed to the females in our society.

In this respect, it was found out that among the life quality scores, general health score (GHS) was a bit higher in females while physical role restriction score was in support of the female teachers. It was an expected result to see that physical activity level was higher and that the life quality scores of the females who were fitter physically vis-a-vis the males were higher. When the relation among the MET values, BMI and life-quality scores which were proving these results and the comments was examined (table 4), it was observed that there was a negative meaningful relation among weight and activity levels as well as the life quality scores.

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